Rapid summary

Question:

How could post vaccination recovery (other than clinical management of adverse reactions and anaphylaxis) be safely managed in non-healthcare mass vaccination settings?

Brief summary:
Five guidelines or operation manuals/tools and one systematic review, were identified from a search of the literature conducted in June 2020 in relation to this question.

Post vaccination observation
Most guidelines suggest a 15 minute observation time post vaccination[1, 2, 3, 4, 5]. A separate waiting area is recommended to keep the flow moving[2].

For a drive-through model drivers could be permitted to move their vehicle to a parking bay but must remain in the vehicle for the recommended time period[5].

Strategies to encourage patients to remain for the full waiting period include:

- Clearly explaining the rationale for the waiting period[3]
- Distributing a vaccine record once the wait time is complete[3, 4]
- Monitoring of wait times is suggested[3]

Drive through models
To recognise problems quickly suggestions include:

- Instructing patients to use their car horn to gain attention[5]
- Checking that patients have access to a mobile phone and a contact number for emergencies[5]
- Having appropriately trained person familiar with signs and symptoms of adverse events and their appropriate management including early signs of anaphylaxis, allergic reaction and syncope, roving in the car park to check on patients[2, 5, 6]. Syncope was most often reported among adolescents[2]

To minimise the likelihood of adverse events:

- Where these might be anticipated, for example those with previous history of anaphylaxis or allergy to influenza vaccination, an in-clinic appointment should be offered[5]

Clinic layout
Included sources recommended that:

- The post-vaccination observation area and a screened off medical emergency area should be located as close to the vaccine administration area as possible[1]

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- A plan for patient transport and rapid access to emergency care if needed both across the site and to a healthcare facility should be developed[1, 3,4, 6]
- In a walk-in model, seats in the observation area should be set up to allow clear view of waiting clients and monitoring of wait times is suggested[3]

Communication:

- Walkie-talkies or cell-phones for staff with replacement batteries or chargers in clinics spread over large areas[1]
- Ensure that patients have access to a mobile telephone and the clinic's phone number[5]
- The clinic's phone must be monitored at all times[5]
- Patients should be instructed to use the car horn to gain attention[5]
- All instructions should be communicated to both the patient and their accompanying household member[5]
- In the event of an emergency security staff should arrange to meet emergency vehicles at the outer perimeter and guide them to the appropriate entrance[1]

Resource requirements:

- Accessible medicines and supplies needed to manage a potential anaphylactic reaction and maintenance of these supplies[3]
- Emergency medical kit and a clinician certified in basic cardiopulmonary resuscitation[2]
- Staff who are trained to identify and manage all adverse events, including anaphylaxis, syncope and anxiety reactions[3, 5]
- The clinic should consider having an appropriately trained person roving in the carpark to check on patients post vaccination[5]

Limitations:
This summary may be useful to identify key points on the topic. However, the included sources have not been assessed for quality and comes from a wide range of published material.

Methods

A search of databases, grey literature and screen (details available on request) identified six sources relevant to this question. The majority of screening was conducted by a single reviewer. Consistency checks were conducted on over 20% of the records. No critical appraisal of the included sources was undertaken. Only sources from OECD countries plus Hong Kong, Singapore or Taiwan were included.

Detailed information from the guidelines, and systematic reviews, relevant to this question, has been extracted in Tables 1 and 2 of the data extraction section. Data extraction tables are grouped by type of source.

Data extraction:

The tables below give the reference of the paper, access to the paper where freely available, key relevant findings, any considerations that arise and any caveats to bear in mind about the quality or limitations of the included articles.

Table 1: Guidelines and Resources

Reference	Summary of relevant content
1. Centers for Disease Control and Prevention (CDC). Guidelines for Large Scale Novel H1N1 Influenza Vaccination Clinics. Atlanta, GA (US): CDC; 2009 [06/07/2020]. Available here	This is a webpage from CDC which provides guidelines for large-scale influenza vaccination clinic planning. The information related to post vaccination recovery in this guideline was: • "The vaccine recipients are routed to an area set aside to be observed for 10-15 minutes for potential post vaccination problems" • "The post-vaccination observation area and a medical emergency area are located as close to the vaccine administration area as possible" • "Security staff should arrange to meet emergency vehicles at the outer perimeter and guide them to the appropriate entrance". • "If available, walkie-talkies and cell phones should be distributed to the clinic staff. Ideally, replacement batteries and/or battery chargers for each device also should be made available."
2. Centers for Disease Control and Prevention (CDC). CDC guidelines for large-scale influenza vaccination clinic planning. Atlanta, GA (US): CDC; 2015 [06/07/2020]. Available here	This reference is a webpage from CDC which is more recent and also provides guidelines for large-scale influenza vaccination clinic planning. The information related to post vaccination recovery in this guideline was: • "Ensure the presence of an onsite emergency medical kit and a designated trained physician, emergency medical technician (EMT), pharmacist, or nurse certified in basic cardiopulmonary

Reference	Summary of relevant content
	resuscitation who can administer treatment for allergic reactions and address urgent medical problems." • "Syncope has been most often reported among adolescents after vaccination." • "Clinicians should consider observing recipient for 15 minutes after vaccination. This can be done in a separate waiting area to keep the flow moving."
3. Public Health Agency of Canada (PHAC). Canadian Pandemic Influenza Preparedness: Planning Guidance for the Health Sector. Vaccine annex Canada: PHAC; 2017 [09/07/2020]. Available here	This document includes programmatic lessons learned from the 2009 H1N1 pandemic and planning guidance for mass-immunisation clinics. The information related to post vaccination recovery in this guideline was: • "After immunization, it is recommended that clients be kept under observation in the clinic for at least 15 minutes for monitoring of immediate vaccine reactions" • "Clinic planning should consider additional staff or volunteers to monitor client wait times." • "Strategies that may support clients in remaining for the full waiting period include clearly explaining the rationale for the waiting period, offering refreshments, offering health promotional and educational materials, providing information about post-vaccine care, common side effects of immunization, and follow-up procedures/appointments for a second dose if needed; and distributing a vaccine record once the wait time is complete." • "The waiting period also provides an opportunity during which clients can complete an evaluation of their clinic experience." • "It is recommended that the staff member monitoring the waiting area be a health professional with the training and skills to identify and respond appropriately. In smaller communities where human resources are limited, consider trained volunteers who can immediately alert on site health professionals" **Management of Adverse Events**

Reference	Summary of relevant content
	• "Emergency kits to manage anaphylactic reactions must be readily available and easily accessible by staff at the clinic and protocols must be in place for maintenance of kits." Recommended list of items in an anaphylaxis kit: www.phac-aspc.gc.ca/publicat/cig-gci/p02-03-eng.php • "Clinic staff must be trained to identify and manage all adverse events, including anaphylaxis, syncope and anxiety reactions." • "Planners may want to consider identifying a separate area within the clinic layout for first aid and the management of adverse events." • "Clinic procedures to manage anaphylaxis should follow jurisdictional protocols and should include emergency telephone numbers, medical directives for delivering appropriate medication and a clear plan for patient transport to a health facility"

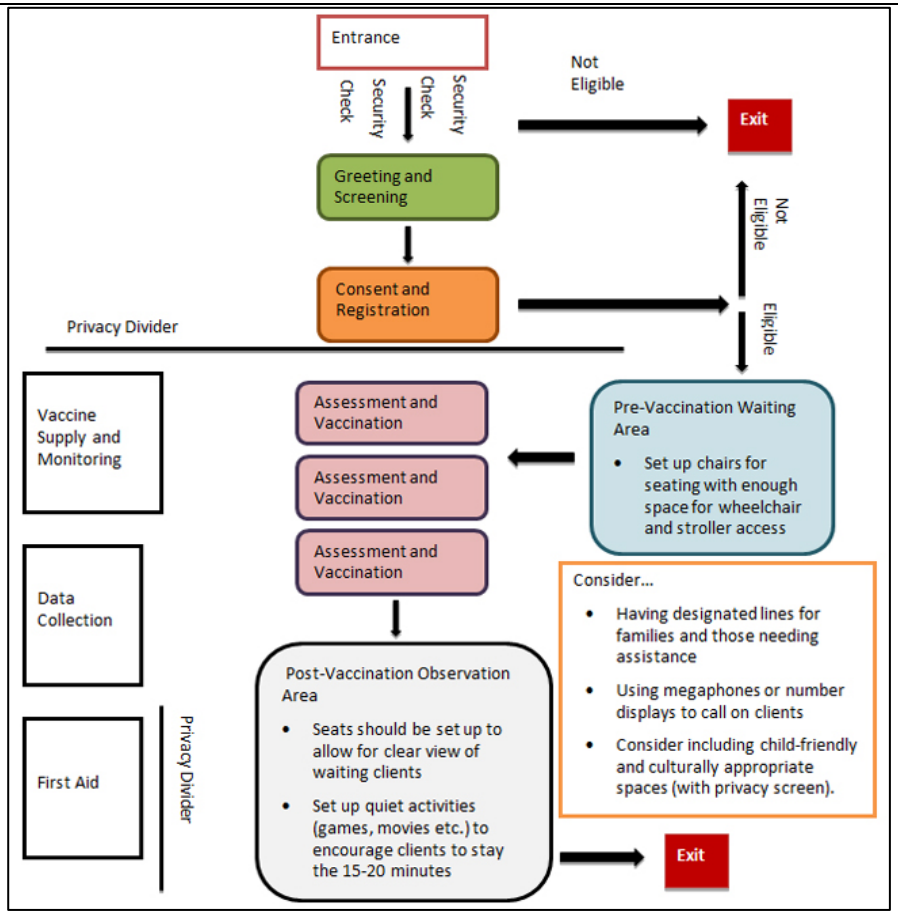
Reference	Summary of relevant content
	

Fig.1 Sample mass immunisation clinic setup

Reference	Summary of relevant content
4. Military health system. Recommendations for Mass Immunization Events During Pandemic Conditions. Falls Church, VA (US): Health.mil; 2020 [06/07/2020] Available here	This document has been written to support the US Department of defence personnel preparing for mass vaccination events to include measures to decrease the risk of transmission for diseases like COVID-19. It does have a focus on delivering influenza vaccine during a pandemic rather than a COVID-19 vaccine. The information related to post vaccination recovery in this guideline was: • "Planners need to develop an emergency response and resource plan (staff, equipment) for adverse events. Staff roles and responsibilities, rapid access to staging areas, and a plan for patient transport to emergency care if needed must be identified. Planners may need to consider methods to travel rapidly across a large physical area (vehicles, golf carts)." • "The 15-minute wait post vaccination is a standard of care and strongly recommended." • "Strict enforcement of the 15-minute wait is strongly encouraged for drivers. Proof of documentation could be withheld until after the 15 minute wait time is completed." • "Site consideration include the ability to maintain social distancing with seating and emergency response access to patients." • The recovery area "is the location to examine and treat individuals with post vaccination issues." • "Plan for the need to transport some patients for follow on care over further than typical distances."
5. Government of New South Wales (NSW). Drive-in Immunisation Clinics: Advice for providers during COVID-19 response Sydney (Australia): NSW Government; 2020 [06/07/2020]. Available here	This document was published as guidance for GP practices considering vehicle – based influenza clinic option where no other suitable options are available. The information related to post vaccination recovery in this guideline was: • "When making the appointment, patients must be asked to bring a responsible adult member of their household with them in the vehicle so they can drive home." • "People attending drive-in immunisation clinics MUST remain in the car to observe the standard 15-minute observation period; drivers can be permitted to move their vehicle to a parking bay not being used for vaccinations, if required."

Reference	Summary of relevant content
	• "Appointment times should be staggered to allow for the immunisation encounter and 15 minutes post vaccination observation." • "Patients should be provided with a printable pre vaccination checklist and instructions for the clinic, including the required 15 minute recovery period, this should be provided when the patient makes their appointment." The following post vaccination strategies should be considered to support the management of adverse events: • "The clinic should consider having an appropriately trained person roving in the carpark to check on patients post vaccination. Staff should be familiar with signs and symptoms of adverse events and their appropriate management including early signs of anaphylaxis, allergic reaction and syncope." • "Medicines and supplies needed to manage a potential anaphylactic reaction and staff trained in their use should be readily available." • "Providers should ensure that patients have access to a mobile telephone and the clinic's phone number." • "The clinic's phone must be monitored at all times." • "Patients should be instructed to use the car horn to gain attention." • "All instructions should be communicated to both the patient and their accompanying household member."

Table 2: Systematic reviews

Reference	Summary of relevant content	Limitations
6. Buck BH, et al. Effective Practices and Recommendations for Drive-Through Clinic Points of Dispensing: A Systematic Review. Disaster Medicine and Public Health Preparedness. 2020:1-15. Available here.	This systematic review sought to identify effective practices and recommendations for implementing drive-through clinics (DTCs) as a point of dispensing where participants drive to a designated location and receive prophylaxis while remaining inside their vehicle. The systematic review included 13 studies. The information related to post vaccination recovery in this systematic review was: • "Utilisation of a medical algorithm tailored to the specific medication intended to treat the disease/agent." • "Provision of an observation station following prophylaxis to monitor patients" • "Further safety monitoring teams could be dispatched to roam around the DTC to monitor vaccinated patients." • "On-site transportation e.g. golf carts equipped with stretchers to access medical attention if located adjacent to a hospital or an emergency exit." • "An emergency bypass lane should be provided for vehicle exit and emergency vehicle access if not near a hospital." • "Provision of mental health resources."	This systematic review only includes drive through point of dispensing models. It includes only peer reviewed literature published from 1990 onwards. The quality of the included research was not assessed. Most studies included were descriptive (7/13 studies), four were models / simulation studies and two were summary articles. Authors themselves note that the included studies describe simulations or practice events and add that in a real-world emergency, such services may be strained by a large influx of stressed, anxiety-stricken community members inducing a more chaotic environment.